

## CLAIMS

It is claimed:

1. A single-phase motor driving circuit comprising:

a controller for outputting a control signal to drive a single-phase motor in a period in which a saw-tooth voltage of a predetermined cycle is larger than a duty setting voltage based on a result of comparing a detected temperature voltage changed based on a temperature detected by a temperature detecting device with a starting duty setting voltage increased with time while a voltage smaller than said detected temperature voltage at the time of starting said single-phase motor is set as an initial value,

wherein said controller sets said duty setting voltage as said starting duty setting voltage when said result of the comparison shows that said starting duty setting voltage is smaller than said detected temperature voltage, and

said controller sets said duty setting voltage as said detected temperature voltage when said starting duty setting voltage is larger than said detected temperature voltage.

2. The single-phase motor driving circuit according to claim 1, wherein said controller is constructed in an integrated circuit.

3. The single-phase motor driving circuit according to claim 1, further comprising:

a section for generating said detected temperature voltage;

a section for generating said starting duty setting voltage; and

a section for generating said saw-tooth voltage.

4. The single-phase motor driving circuit according to claim 1, wherein said initial value of said starting duty setting voltage is smaller than a minimum value of said saw-tooth voltage.

5. The single-phase motor driving circuit according to claim 2, further comprising:

a section for generating said detected temperature voltage;

a section for generating said starting duty setting voltage; and

a section for generating said saw-tooth voltage.

6. The single-phase motor driving circuit according to claim 2, wherein said initial value of said starting duty setting voltage is smaller than a minimum value of said saw-tooth voltage.

7. The single-phase motor driving circuit according to claim 3, wherein said initial value of said starting duty setting voltage is smaller than a minimum value of said saw-tooth voltage.

8. The single-phase motor driving circuit according to any one of claims 3 through 7,

wherein said section for generating the starting duty setting voltage includes at least a capacitor,

a power source is connected to one end of said capacitor and a switching device is connected to the end,

said switching device is turned ON to discharge electricity from said capacitor when said single-phase motor is stopped,

said switching device is turned OFF to start charging said capacitor from said power source when said single-phase motor is started, and

a transitional rising voltage, which appears in said end of said capacitor in said charging step, is said starting duty setting voltage.

9. The single-phase motor driving circuit according to any one of claims 1 through 7, further comprising a logic section for generating a driving signal based on said control signal and outputting the generated driving signal to said single-phase motor.

10. The single-phase motor driving circuit according to claim 8, further comprising a logic section for generating a driving signal based on said control signal and outputting the generated driving signal to said single-phase motor.

11. A single-phase motor driving method comprising the steps of:

outputting a control signal to drive a single-phase motor in a period in which a saw-tooth voltage of a predetermined cycle is larger than a duty setting voltage based on a result of comparing a detected temperature voltage changed based on a temperature detected by a temperature detecting device with a starting duty setting voltage increased with time while a

voltage smaller than said detected temperature voltage at the time of starting said single-phase motor is set as an initial value;

setting said duty setting voltage as said starting duty setting voltage when said result of the comparison shows that said starting duty setting voltage is smaller than said detected temperature voltage; and

setting said duty setting voltage as said detected temperature voltage when said starting duty setting voltage is larger than said detected temperature voltage.